DOCUMENT RESUME

ED 394 396 HE 029 087

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TITLE Motivation To Learn in University Students: Links with Vygotsky's Assisted Discovery.
PUB DATE 95
NOTE 16p.; Paper presented at the European Conference on Educational Research (Bath, England, United Kingdom, September 14-17, 1995).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; *College Instruction; Foreign Countries; Goal Orientation; Higher Education; *Learning Theories; *Mastery Learning; Self Esteem; *Student Motivation; *Teacher Influence; Teaching Methods; Undergraduate Study
IDENTIFIERS Australia; *Vygotsky (Lev S)

ABSTRACT

This study examined the role of the university lecturer in fostering the interplay between motivation, confidence, and cognition in students. The focus is on two theoretical frameworks: achievement goal theory for the motivational and confidence aspects and Vygotskian theory for aspects concerning educational development. Achievement goal theory is seen as focusing on either performance (or ego-involved) goals or mastery (or task-involved) goals. Vygotsky's ideas focus on cognitive development as a socially mediated process with the instructor providing guidance in the assisted discovery process. In this study, 55 students enrolled in their first year of an undergraduate course at an Australian university were interviewed individually about their reactions to one of the subjects they were studying: child and adolescent development. Changes were made in the course to emphasize a mastery climate and a more positive approach to learning. Analyses of the interview transcripts revealed congruence between the motivational theory of achievement goals and Vygotsky's theory of educational development. The paper concludes that a lecturer who adopts the mastery goal of wanting students to understand is more likely to employ Vygotskian teaching techniques. (Contains 30 references.) (DB)

Motivation to learn in university students: Linl.. with Vygotsky's assisted discovery.

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Paper presented at the European Conference on Educational Research
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Abstract

Fifty-five students enrolled in their first year of a university undergraduate course were interviewed individually about their reactions to one of the subjects they were undertaking: child and adolescent development. Analyses of the transcripts of these interviews revealed congruence between the motivational theory of achievement goals and Vygotsky's theory of educational development. A connection between these two theories is presented with the argument that a lecturer who adopts the mastery goal of wanting students to understand is more likely to employ Vygotskian teaching techniques. It is unfortunate, that these desirable behavious occur infrequently at the university undergraduate level.

Introduction

For students to learn they must want to learn, they must believe that they can learn, and they must have the skills to master the task at hand: a complex interplay among motivation, confidence, cognition. This paper is an examination of role of the university lecturer in this interplay. Two theoretical backgrounds are presented: achievement goal theory for the motivational and confidence aspects, and Vygotskian theory for the aspects concerning educational development. A connection between the theories will be presented with the argument that a lecturer who adopts the mastery goal of wanting students to

[1]Some of the data of the present study were reported previously in a paper presented by Jennifer Archer and Jill Scevak at the annual conference of the Australian Association for Research in Education, University of Newcastle, NSW, Australia, November, 1994.

understand is more likely to employ Vygotskian teaching techniques that should increase students' skills and enhance their sense of confidence that they can master the work at hand.

Achievement goal theory

Achievement goal theory focuses on the achievement goal (or combination of goals) that a person holds (Ames, 1992; Blumenfeld, 1992; Meece & Holt, 1993). As Ames (1992, p. 261) puts it, a goal "defines an integrated pattern of beliefs, attributions, and affect that produces the intentions of behavior...represented by different ways of approaching, engaging in, and responding to achievement-type activities." The adoption of a goal can be seen as setting into motion a particular way of interpreting and responding to the world.

Two types of goal in particular have been proposed (Ames & Archer, 1988; Duda & Nicholls, 1992; Elliott & Dweck, 1988): a performance (or ego-involved) goal, and a mastery (or task-involved) goal. Those who hold a performance goal are concerned primarily with demonstrating their ability to others (or concealing a perceived lack of ability) which is shown to best advantage by outperforming others, particularly if success is achieved with little effort. Those who hold a mastery goal want to develop their competence on a task or increase their understanding of a subject and anticipate that this end will be achieved by hard work. Orientation towards a goal has been demonstrated to be a function of individual differences or to be induced by situational cues such as the attitudes and behaviour of a teacher or lecturer (Ames, 1992; Dweck, 1986).

Orientation towards a mastery goal has been associated with the desire to understand a topic (Ames & Archer, 1987), the choice of more difficult rather than easy tasks (Ames & Archer, 1988; Archer, 1994; Elliott & Dweck, 1988); focusing on attributions to effort rather than attributions to ability (Ames & Archer, 1988; Nicholls et al., 1985), and reporting use of more effective learning strategies (Ames & Archer, 1988; Archer, 1994; Meece, Blumenfeld & Hoyle, 1988; Nolen, 1987). In Dweck's words (1986, p. 1043), the adoption of a mastery goal "encourages children to explore, initiate and pursue tasks that promote intellectual growth."

On the other hand, orientation towards a performance goal has been associated with with a tendency to avoid challenging tasks (Elliott & Dweck, 1988), negative feelings such as shame and embarrassment following poor performance (Elliott & Dweck, 1988; Jagacinski & Nicholls, 1987), and use of "surface" strategies such as rote learning (Meece et al., 1988). Susceptibility to these maladaptive attitudes and behaviours is most pronounced in students who worry that they lack the ability to learn. Because a performance-oriented student wants to demonstrate competence to others, the fear of appearing incompetent impels him to do things that might hide incompetence in the short term (such as ostentatiously wasting time in an examination) but does little to enhance learning in the long term. In Covington's (1984) terms, he is protecting his sense of self worth. Beliefs about competence are explored in more detail in the following section with the argument that is preferable to consider ability as a malleable rather than a fixed quantity.

Beliefs about competence

Students' beliefs about their competence as learners are important determinants of behaviour (Nicholls, Cheung, Lauer, & Patashnick, 1989; Stipek, 1993). Students who worry that they lack the ability to complete tasks often put most of their effort and strategies into not looking incompetent in front of lecturers and peers rather than focusing on the task itself. For these students, universities are not comfortable places where they feel ready to learn but places of anxiety and fear of humiliating public exposure.

However, ability can be conceived of in different ways. As discussed above, it can be considered in a relative sense, in comparison with one's peers, the notion elaborated in Covington's (1984) self-worth theory. Here, ability is seen as a stable trait. Alternatively, ability can be seen as a student's belief that she is capable of completing a particular task, as described in Bandura's (1986) self-efficacy theory. Successful completion of one task should enhance one's sense of self-efficacy for completing the next task. That is, ability is malleable, improvable. In Dweck's (1986) terms, ability is seen to be incremental rather than as a fixed entity in adult life. Support for this position is offered by Aronson and Jones (cited in Aronson, 1992). Here, instructions to teachers to focus on students' scores versus students' improving ability resulted in different behaviours from teachers: scores-oriented teachers focused on students' early marks on anagram puzzles whereas improvement-oriented teachers focused on students' later marks.

The conception of ability as a stable trait is particularly evident in Westernised countries where the sense of self-worth is tied closely to perceptions of one's ability relative to that of others (Nicholls, 1989). To counter feelings of low self-worth, one suggestion has been to try to convince all students that they have high ability. This is a rather fruitless endeavour because differences in ability cannot be disguised. A more viable solution might be to encourage a shift in students' thinking to the incremental notion of ability inherent in Bandura's theory. Here, effort and practice, rather than exposing a lack of ability, should be seen to enhance self-efficacy.

Vygotsky's dialectical theory of cognitive development

Vygotsky's notion of cognitive development as a socially mediated process is receiving increasing attention from researchers (Berk, 1991; Moll, 1990; Vygotsky, 1926/1991, 1934/1987). Vygotsky saw all higher mental functions as appearing first on an interpersonal plane, between two human beings, before existing on an intrapsychic plane within an individual: "...as knowledgeable members of society help children master culturally meaningful activities, the communication occurring between them is gradually incorporated into children's thinking. Once children internalize the essential features of these dialogues, they can use the diverse skills embedded in them to accomplish tasks on their own" (Berk, 1991, p.27).

Learning takes place within a "zone of proximal development". In this zone, tasks that are too difficult to be done alone can be accomplished through verbal interaction between the child and an adult or a more skilled peer. Input from the adult provides support or scaffolding for the child's growing cognitive competence. For the child to learn, there must be a match between the assistance offered and her current abilities. If an

adult offers assistance for a task the child can do alone, then she could become impatient or lose a sense of ownership of the task. On the other hand, if an adult's assistance is too far in advance of her present capabilities, then she is not able to master the task and ends up feeling frustrated or incompetent. The focus is on the verbal interaction: Vygotsky saw language as one of the most powerful tools for transmitting culture from experienced to inexperienced members of the culture (Blanck, 1990).

Vygotsky in the classroom

While acknowledging that much learning occurs outside schools or informally within schools, researchers have employed Vygotsky's ideas to the classroom (see, for example, Daniels & Lunt, 1993; Davydov, 1995; Moll, 1990; Tharp & Gallimore, 1988). Vygotsky viewed the role of the teacher as a complex one. The teacher, in addition to a familiarity with the subject matter and teaching activities, should be keenly aware of the student's personal characteristics and social milieu. Only then can the teacher integrate all these elements to raise the student's mind to a new level of consciousness and activity. Vygotsky's notion of assisted discovery should be evident in terms of a teacher's explanations, demonstrations, and verbal prompts, especially in one-to-one interactions between a teacher and a student. This perspective has been evident in Russian applications of Vygotsky's theory (Daniels & Lunt, 1993). Assisted discovery also could be seen in small groups of students with verbal interaction among students with moderate discrepancies in their level of ability. Here, the more advanced students would take over the role of teacher. Applications to cooperative groupings among peers have been the focus of much western research (Daniels & Lunt, 1993).

Critics of the school system in Westernised countries point to the lack of "real" learning in schools. Writing more than thirty years ago but still evident today, Holt (1964) paints a depressing picture of students, particularly the less able, struggling through the school day with endless minor tasks whose purpose is a mystery to them, their aim merely to produce the answers the teacher requires. Similarly, Tharp and Gallimore (1988) argue that much of what happens in schools involves the teacher eliciting the *correct* answer from students with little or no interest in the thinking processes that led students to give wrong answers. Often teaching consists of little more than providing tasks to students and later assessing their performance on them. Ranking seems a better term than teaching.

The Vygotskian focus on assisted discovery, with extensive interaction between an individual student and a teacher aware of the student's current capabilities and sufficiently competent in the subject matter to know the next step, is seldom seen. Vygotsky (1926/1991, p. 82) wrote that the "personal activity of the student must be placed at the base of the educative process, and all the teacher's art must come down to directing and regulating its activity." From a practical viewpoint, the cost involved in intensive one-on-one contact is prohibitive. Practicality, however, is not the only reason that much of formal education destroys rather than enhances a love of learning. Tharp and Gallimore (1988) contend that many teachers are not aware of the real nature of teaching: their conception of education is more akin to the ranking system described above.

At the university level the close contact between lecturer and student that characterises assisted discovery is not common until postgraduate research work. For many undergraduates, contact with lecturers goes no further than watching them present information to large groups. Lecturers may conduct tutorial sessions with smaller groups, though often this is done by postgraduate students acting as tutors. Tutors and lecturers often look upon tutoring as a necessary evil that keeps them away from their own work. Students are expected to work independently. Perhaps more so than in high school, the emphasis is on setting tasks, assessing them, and then ranking students' achievement.

Not all assessment is completely summative, like an end of semester examination, with the results used only to calculate a final grade. Students can have assignments or other work to hand in during the semester. Often, however, there is little feedback other than a mark and some cursory comments. Even when there are more extensive comments, students imbued with the notion of education as ranking will focus only on the mark and pay scant attention to comments (Archer & Scevak, 1994a). Another practice with Vygotskian implications, students working on group tasks, is becoming more common. However, the ideal of students of somewhat higher ability or experience patiently assisting students of slightly lesser ability within the group will only work consistently when groups are formed with this aim in mind and students agree to act in this manner.

Achievement goals and Assisted discovery

As described earlier, the adoption of an achievement goal sets in motion a particular conception of what it means to achieve (Ames, 1992; Dweck, 1986): to increase in understanding (a mastery orientation regardless of students' level of perceived ability), to demonstrate achievement to others (a performance orientation for students with high perceived ability), or to hide incompetence from others (a performance orientation for students with low perceived ability). Research (for a review see Ames, 1992) has shown that students can be encouraged to adopt a performance goal or a mastery goal by making certain situational cues salient. Lecturers like teachers would be expected to orient their instruction more towards one or other of these achievement goals: what are they trying to achieve in their teaching?

A performance-oriented lecturer would be likely to view teaching as a means of establishing students' relative levels of competence. This could be done using competition, with assessment tasks identifying the high achieving students as the "winners." Once identified, these students tend to be accorded special status and held up as the standard for other students. The confidence of the high achieving students should be robust, bringing with it desirable motivational characteristics such as enjoyment as understanding increases, willingness to seek help when needed, and persistence when difficulties arise. Other members of the class are less likely to feel confident of success, when success is judged in terms of outperforming others. Failure in strongly competitive situations tends to be attributed to a lack of ability (Ames, 1992). For people who see ability as a stable trait, attributing failure to a lack of ability can engender a disinclination for further study, even a sense of helplessness.

A mastery-oriented lecturer should be concerned primarily with students' understanding of the subject matter. The process of arriving at an answer should be

accorded attention, not just the final product. The approach to assessment should differ from that of the performance-oriented lecturer. That is, though assessment does provide a means of ranking students, more importantly it provides information about students' cognitive processes. As noted earlier, with a mastery focus on effort and effective study strategies rather than ability, failure does not carry with it the fear of exposing a lack of ability. The messages students receive from a mastery-oriented lecturer, either directly or indirectly, should be that initial lack of understanding frequently can be turned around through effort, practice, and seeking help from either the lecturer or fellow students.

There is evidence of a link between students' perceptions of a mastery-oriented teacher or lecturer and attributions of success to good teaching (Ames & Archer, 1988; Archer, 1992; Archer & Scevak, 1994b). In each of these studies, the correlation between perception of a mastery climate and attributing success to good teaching was stronger than other correlations, for example, those between perceptions of a mastery climate and attributions to effort or attributions to effective study strategies. In contrast, in the case of failure, students who perceived a mastery climate did not attribute failure to poor teaching. Again, this negative correlation between a mastery climate and attributing failure to poor teaching was the most significant of any correlation. In each of these studies there were no significant correlations between perception of a performance climate and attributing success to good teaching or attributing failure to poor teaching.

In practical terms, how would assisted discovery, or at least a less than ideal form of assisted discovery that does not involve one-to-one interaction between a teacher and a student, manifest itself in mastery-oriented university classrooms? One method would be written feedback on students' work. The feedback could identify the strengths and weaknesses of the work and provide suggestions for the next step to take. Obviously, this feedback would need to be more detailed than the cursory comments many students receive. Also, students need to be encouraged to pay attention to the feedback, rather than glance fleetingly at it after finding the mark and comparing their mark to those received by others (assessment as ranking). One way to encourage attention to the feedback would be to require students to resubmit their work after taking the feedback into account.

Providing written assistance to students also could take the form of manuals, booklets, or textbooks. These usually are written in simpler language than that in the research literature in an attempt to help students cope with difficult concepts. Obviously, this sort of assistance does not have the one-to-one correspondence between lecturer and student of personal feedback on an assignment. However, written assistance should be most useful when it is targeted to as specific an audience as possible, an audience well known to the writer so that the writing can match as closely as possible students' sophistication in reading (in Vygotskian terms, culturally relevant language), their current understanding, and the task they have to do. Much of the recent work on considerate texts (for example, Sawyer, 1991) is concerned with this matching of reader to text.

Vygotsky (1987, 1991) along with psychologists such as Ausubel stressed the centrality of students' current understanding. If the lecturer is not aware of what the students know, then the subject matter he introduces may be too easy or too difficult for them. Either way, no learning occurs. A way of finding out what students know (or at a deeper level what experiences have generated the knowledge they have) in addition to

reading their assignments or marking their examinations, would be to listen to what they have to say. This happens in lectures with relatively small numbers of students, or more easily in the less formal atmosphere of a tutorial room. If students are encouraged to participate in tutorial discussons, knowing that their responses will not be ridiculed publicly, then their current level of understanding of the topic should become evident, and careful questioning by the lecturer should move them to Vygotsky's zone of proximal development. The Socratic examination of a student's argument and its underlying assumptions comes to mind. Other students listening to this interchange may also benefit from it if their level of understanding is similar to that of the student in the spotlight.

Volet's (1991) study of first year computer programming students provides support for this. The experimental group in this study experienced a tutorial situation where most of the time was devoted to programming problems worked through as a group with either the tutor or a student leading the discussion. The control group experienced the normal tutorial situation of working individually on problems with the tutor providing help to a student only when asked to do so. Results showed more enjoyment of the subject by the experimental group, higher achievement on the more complex examination problems, and more members of the experimental group completing advanced subjects in computer programming.

Students working in groups would demonstrate assisted discovery when the more experienced member of the group takes on the role of the teacher in helping the development of the less experiened members. However, the intent of the group work may affect this interaction. If groups are competing against each other, then failure of a group has been shown to have a negative effect on relationships within the group (Ames, 1984; Harari & Covington, 1987). The more competent members are looking for someone to blame, while the less competent members feel remorse and shame for letting down the team. However, a mastery-oriented lecturer would be unlikely to encourage competition among students or among groups, other than for easy tasks or in a playful manner. In well operating groups, the interaction among students who know each other well, who share many similar experiences, who use language with which they are familiar, and who want each other to learn, learning should occur.

The present study

In this paper we are making connections between two fields: university students' motivation to learn and beliefs that they are capable of learning, and Vygotsky's notion of assisted discovery. When some of the current data were reported last year (Archer & Scevak, 1994a), the Vygotskian implications were not considered in any direct fashion, though reference was made to lecturers helping students learn by providing scaffolding. Subsequent thinking about the interview data pointed to a Vygotskian interpretation. We looked for signs of a connection between a mastery orientation on the part of the lecturer, the attitudes and behaviours that Vygotsky identified as necessary for learning to occur, and students indicating a motivation to learn.

Method

Approximately 370 students were enrolled in a Bachelor of Education course in a variety of teaching specialisations (early childhood, primary, and secondary). They were attending a moderately sized university in a large industrial city in New South Wales, Australia. In their first year, all students took a year long subject in child and adolescent development (usually referred to as Education 1). The subject was run by a group of eight lecturers who took turns to present a massed lecture attended by all students. In addition, there was a two hour tutorial held every week for smaller groups of students (about 20 to 25 in each group) conducted by one of the lecturers, so that each lecturer was responsible from anywhere from one to four tutorial groups.

Four changes were introduced into the subject for the cohort of students described in this study. The changes were as follows:

(1) The major assignment, unlike the minor assignment, was to be submitted twice: the first submission would result in a mark out of 10 and written feedback about how the assignment could be improved; the second submission would result in a mark out of 20, and therefore a total mark out of 30. Students also were required to submit a plan for their assignment.

(2) Each student was given a 33 page booklet (written by the present authors) entitled "How to write an esay in TE115E" (the subject code). The six sections of the booklet included finding references in the library, citing references in the assignment, taking notes for the assignment, planning an assignment, looking at and improving the assignment of a previous student, and guidelines for expression and spelling of psychological terms.

(3) Students were given the choice of working alone on the major assignment or working with a partner, unlike the minor assignment which had to be completed individually.

(4) Students were given a choice of topics for the major assignment. Lecturers chose from topics from a central list, offering a choice of about six topics. To give an idea of the content of the assignment, two topics offered by lecturers were "Discuss the controversy concerning whether or not there is an adolescent identity crisis" and "Outline the major criticisms of Piaget's theory and argue whether or not you think his theory remains valid."

It had been anticipated that making these structural changes to the structure of Education 1 would increase students' perceptions of a mastery climate and hence a more positive approach to learning: allowing re-submission of the major assignment following feedback should emphasise that evaluation can provide useful feedback, the importance of effort and the use of appropriate strategies in achieving success, and the attitude that mistakes can be corrected; providing a "how to" booklet should emphasise that there are appropriate strategies that can be learned for writing a good assignment, that is, ability is not the only factor influencing success; allowing students to work with a partner should encourage cooperation rather than competition among students; and providing a choice of topics (of relatively equal level of difficulty) should allow students some sense of control of their learning and the chance to select a topic of personal interest to them.

Of the 370 students enrolled in Education 1, 55 were asked to participate in an audio-taped interview lasting approximately 40 minutes each, in which questions were asked about their motivational orientation in subjects in high school and university, the sorts of study strategies they employed to complete these subjects, their attributions for success and failure, and their reactions to the changes made in Education 1. The students were drawn from all specialisations with the BEd course and represented a wide range of achievement levels.

Results

Sections of the transcripts of the individual interviews with 55 of the Education 1 students were the data of the study. Students' reponses are categorised in Tables 1 and 2. In Table 1, students' reactions to the changes made in Education 1 in an attempt to enhance students' motivation to learn are shown. The four changes concerned the writing of the major assignment. The results show that almost all the students interviewed thought the re-submission of the assignment was a good idea. The written feedback was useful, it helped them to understand the topic, and it motivated them to do better. The great majority of students found the strategies booklet useful, particularly for correct referencing procedures, and planning the structure of a large assignment. Having a choice of topics was very well received, chiefly because it allowed students to choose a topic of interest to them, and this in turn, motivated them to work hard. Working with a partner produced more equivocal results. Less than half of the students chose to work with a partner. The most common reasons given for choosing not to work with a partner included a preference for working alone and the worry of letting down or being let down by another student.

In Table 2, students' comments about the usefulness of the weekly tutorial in helping them learn were categorised. The categories (social interaction, assisted discovery, attending to individual needs, cultural and vocational relevance, and maintaining expertise) were selected to fit with Vygotskian ideas about how learning takes place. Comments about the tutorials were largely positive. The most commonly cited reason for finding the tutorials productive was that the lecturer helped the students to understand the subject matter (assisted discovery). The lecturer also encouraged discussions among the students (social interaction), stressed the relevance of the topic to teaching and learning (cultural and vocational relevance), and paid attention though to a lesser extent to the development of individual students (attending to individual needs).

Special attention was paid to the nature of students' comments when they mentioned discussions within the tutorials. In these periods of discussion, students noticed primarily the social interaction aspect of letting students give their point of view. There was frequent mention too of the lecturer helping students to understand the work, and pointing out the relevance of the work. The content (developmental psychology as it affects teaching and learning) was well received by most students. Interestingly, there were very few comments to do with students' perceptions of their ability or lack of ability to complete the work required in Education 1.

Discussion

The results point to congruence between achievement goals and Vygotsky's theory of assisted discovery in that many of the classroom behaviours that researchers argue enhance students' motivation to learn are the same behaviours Vygotsky sees vital for learning. This is borne out in the re-analysis of students' reactions to the changes introduced into the subject, and in the new analysis of students' accounts of their experiences during the tutorial periods of Education 1. Before exploring these connections in more detail, the two theoretical backgrounds are recapitulated briefly.

Research has shown that students' motivational goal orientations can be affected by situational cues such as the sorts of tasks given to them, the amount of freedom they have to make choices about what they learn, and the focus of evaluation (Ames, 1992). A mastery orientation is encouraged by giving students interesting tasks at an appropriate level of difficulty, allowing students choice in tasks and how they complete tasks, and evaluating tasks in terms of students' level of understanding and improvement on past performance rather than on performance relative to others. Vygotsky proposed that learning is embedded in a culture and is passed from generation to generation chiefly through social interaction. Language is a powerful tool for this transmission of culture. Transmission is accomplished most easily when a member more experienced in one aspect of the culture (a teacher or a lecturer) is aware of the novice's current level of understanding, and, through language, helps the novice to acquire new understanding and ultimately to internalise it.

Students' comments about resubmission of the major assignment following written feedback (a change in evaluation practices) indicated an increased mastery focus. Many students commented that if resubmission was not required then they barely looked at any written comments. The focus was their mark and how it compared with those of their peers. One student said: *"The essays shouldn't be about the final mark, it should be about what you really know."* Another said: *"I hate it when you do an exam, and you hand it in, you get a mark back, and they don't even give you your exam. They say it was fair enough, but it's confidential. But you don't know which questions you got right and which questions you got wrong, so you can't improve upon them. You just keep making the same mistakes over and over again. This way, when you get the feedback, at least you know what you're doing wrong. So you can pick up your act a little bit."*

The second aspect which emerged was the sense of guidance the feedback gave to students. The feedback relieved some of the tension and doubts about ability of the more anxious students, and suggested ways in which weaknesses could be overcome. A low mark was not necessarily a sign of low ability that would limit a student to just scraping by for an entire course. One student said: *"If you get to resubmit it, you sort of learn how to rectify that problem, so the next time you can look and say, well she told me I did this wrong, and that's how I rectified it, so I'll do that again."* This response brings to mind Vygotsky's vigilant teacher aware of a student's current understanding and providing assistance or "scaffolding" to help the student master the task.

Again, students mentioned guidance in their comments about the strategies booklet: you understood what was expected of you. One said: *"You look at it and think, well*

yeah, that's what I have to do. And then you can put your work in and say, well it doesn't quite look the same. Why not? And you can refer back and have something to compare it to. It's all very well to say to a child, look, you put a full stop after the last word in a sentence, and you put a capital at the beginning. But if they can't visualise it, then it's just like us. For me particularly, if I've got something there I can have a look at, I feel more confident." What emerges from the interviews is the sense of confidence gained from a booklet written in simple language specifically for the assignment. This also was a form of Vygotskian guidance from lecturers, though at a more distant and impersonal level, in tackling what for most students was a challenging task. Some students, it should be noted, paid little attention to the booklet because they felt confident that they had the skills already.

Students' overwhelming positive response to having a choice of topics was being able to select a topic of interest to them. In Vygotsky's framework, this points to a link with prior experiences and knowledge. This way, the student is more likely to have a firmer base from which to work. Many students also drew the connection between interest and a willingness to expend effort. For example: *"If you choose something you're interested in, you're more likely to read through it, find out more information. I mean, you're expanding your knowledge. Whereas for something you really don't want to do, then you'll just do what you have to and not go any further. And you won't learn anything."* However, contrary to expectations, there were no clear references in the interviews to choice of topics giving students a greater sense of control over their learning. In retrospect, this expectation was rather unrealistic because choice of topics for the major assignment and choice or working alone or with a partner were the only aspects of the subject that did allow students a measure of freedom.

Working collaboratively produced mixed results. As noted, over half the students interviewed chose not to work with a partner. Though there were some logistical reasons for working alone, many students deliberately chose to work this way. The reasons they gave suggested a concern with ability or lack of it. The more competent students did not want their marks to be "pulled down" by an inadequate partner, while the less competent were afraid that this would happen. For example: *"I didn't want to drag the other person down", "I suppose I chose not to work with someone else because I wasn't competent in my work, and I didn't want to disable anyone else by being like that."* As noted earlier (Ames, 1984: Harari & Covington, 1987), the failure of a group can produce strong negative emotions within the group. This cultural reticence or reluctance to work collaboratively probably stems from a competitively structured school system where success is judged individually in terms of outperforming others (for example, see Nicholls, 1989).

Of the students who did work with a partner, some did it to conserve time. This can be seen as an adaptive strategy to help students cope efficiently with a lot of work. Others said they worked collaboratively so that they could find out the ideas of another student. For example: *"So you can incorporate both sorts of perspectives and end up with a better product"*, and *"I thought it would be interesting to see how she goes about it ... we bounced off each other with ideas."* These discussions between students that helped refine ideas highlight Vygotsky's transmission of culture through language. It is

interesting to note that cooperation worked better for activities such as gathering information in the library and talking ideas through, than for the actual writing of the assignment.

The tutorial discussions provided considerable evidence of Vygotskian behaviours. The social aspects of learning were stressed. Students mentioned that good lecturers made sure everyone got involved in the discussions, and were willing to accept different views on the subject matter (*"approachable", "friendly, "relaxed"*). Also there were references to students learning from each other: *"In my first two weeks I couldn't understand a word of it ... But the more you go through the work, and then discuss it with other students, it sort of sinks in more. I think just having other people, rather than just having one, like the way the textbook puts it, is good. All the other students have another way of describing it. And at least one of those ways sinks in and you can sort of think, oh, I understand that."* It seems that the explanation of another student whose language and experience closely matches that of a student struggling with the subject matter provides the key to understanding.

Assisted discovery, often incorporating social interaction, was mentioned frequently. The tutorials of one lecturer were described in this manner: *"We have to work and we get through that. But then there's a sort of time where it's a lot more laid back. And you can have a bit of fun and you give your opinions on certain things. It mightn't be exactly related to what you do in lectures, but it has some link, and we can all discuss it and think and say, well, this is how I feel. And you might get a bit off the actual subject, but we all get our input and get various perspectives, and we're all saying, yes, that's what I've done, and, that's what I think. You get a real good discussion going rather than sitting down and saying, well, this is what the lecturer said, and we all write this down. We do do that, and we go through the overheads and talk about them, but we take it a little further, so it's more than what's up on the board ... just to be able to get in and discuss between each other what people think. And that's always good."*

Though Vygotsky saw assisted discovery emerging out of a close partnership between a teacher and a student, it can be difficult to attend to the needs of individual students in a tutorial room. Even here, however, some students felt that the lecturer was keeping an eye on them and their progress. For example: *She sort of gives equal attention to all of us. Not like to the students who get nine out of ten or ten out of ten. It's like she's there to help us all. Sometimes I haven't been paying attention and she'll say, Jean, answer that question. And I'll go, oh no. So she sort of emphasises that we're all on the one level. She worries if we don't get it. She thinks if she's not getting across to us then it's not effective teaching."*

Students saw good lecturers demonstrating the cultural and vocational relevance of the subject matter, in this case, often relating it to educational experiences: it is important that you understand this because it shows how culture is transmitted, positively or negatively, in educational institutions. One student said: *"He'll tell us a story ... about situations he's been in, and how the research we're talking about relates to situations in schools."* Another said: *"If the textbook's given an answer that's not easy to understand, she'll sort of qualify things and give a practical example that we might relate to more*

easily." There also were some references, though not many, to lecturers maintaining their expertise such as being well prepared and well organised for tutorial sessions.

Attitudes to competence emerged in the interviews. The lecturer who was perceived to encourage a mastery orientation (wanted students to understand, helped students to understand, gave useful feedback, allowed re-submission of work, focused on individual improvement) engendered in students a sense of confidence that the tasks could be mastered with effort on the student's part and help where necessary on the lecturer's part. For struggling students, this sent a message that success does not hang totally on being "smart", the notion of ability as a fixed entity. Rather, there emerges the sense of ability as malleable, something that increases as challenging tasks are mastered. It is interesting to note that students made few references to ability or lack of it in their descriptions of Education 1 tutorials. A well known summary of Vygotsky's approach comes to mind: what you can do with help today you can do by yourself tomorrow.

Conclusion

This paper drew attention to the congruence between the behavious identified by motivational researchers as enhancing students' motivation to learn and those Vygotsky argued were necessary for the transmission of culture from one generation to the next. The link between these behaviours and students' confidence that they are capable of learning also was explored. The question arises: how frequently do these behaviours occur in undergraduate university education? We argue that they occur all too infrequently (further analyses of our interview data are providing support for this contention). There probably are many reasons for this: a tradition of scant attention to students until they appear in post-graduate courses; the feeling that independent competitively organised work is the most appropriate way to learn in a university; lecturers caught between the push to publish (vital for promotion) and the push to teach; shrinking funds that mean more massed lectures and fewer tutorials; and even the growing emphasis on communication via electronic means rather than face-to-face interaction.

In recent years there have been some moves away from traditional teaching methods, to activities such as problem-based learning and cooperative learning. Many of these initiatives seem to have been prompted by an intuitive sense that university learning could be improved, rather than proceeding from a strong theoretical framework. The achievement goal and Vygotskian literature presented here may provide a useful framework. For the present though, it seems that for many university students the current structure is depriving them of the assisted discovery and social interaction necessary for the transmission of cultural knowledge and values.

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